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EARLY CANAL TRAFFIC AND RAILROAD COMPETITION IN OHIO

In 1825 Ohio entered upon the work of building canals across the state to connect the Ohio River and the Great Lakes. Two canals were constructed, of which the first—the Ohio Canal—ran from Cleveland on Lake Erie to Portsmouth on the Ohio River. The first section of this was opened for traffic in 1827, and the entire canal was completed in 1833, when it immediately became profitable. The second one, at first called the Miami and later the Miami & Erie Canal, was built from Cincinnati on the Ohio River to Dayton, between 1825 and 1833, and was later extended to Toledo on Lake Erie. The completed canal was not opened to through traffic until 1845. This was a shorter and more nearly level route, but its lake terminus was too far west to secure much of the through traffic either to or from the Erie Canal and the Hudson River. The use of these two canals by shippers, the shifting principles pursued by the canal commissioners in adjusting the toll-rates, the competition of the railroads and the struggle of the rival routes to secure the traffic, and the final diversion of most of it to the railroads—all these phases of the development of internal improvements in Ohio constitute an interesting and significant chapter in the economic history of the Middle West during the period from 1825 to 1860. Illustrations may also be found here of the fixation of rates by government officials, and of many practices in railway management supposed to belong to a later generation.

Perhaps the most immediate and striking effect of the building of the canals in Ohio was an advance in commodity prices. By providing an outlet for the surplus of the interior they made possible a great increase in the prices of the articles there produced. On the other hand, the prices of commodities brought into the state were correspondingly lessened.¹ Before the opening of the

¹ In 1817 the price of coffee at Chillicothe was 44 cents a pound; of loaf sugar, 50 cents a pound; of pins, 50 cents a paper.—*History of Ohio Canals*, p. 127.

canals the region situated on the Ohio River, and to a less degree the territory on Lake Erie, alone enjoyed the benefits of an outside market. Thus flour sold at \$15 in Sandusky in 1817, while in Columbus, Chillicothe, Circleville, and Worthington, where there was only a local demand and the market was consequently glutted, it sold at from \$6.00 to \$6.50.¹ A similar situation existed as regards corn and other agricultural products. In fact there was practically no sale for these articles, and they often literally rotted in the farmers' yards for want of a market.² A pioneer farmer would spend four days in making a journey of thirty-five miles to the river, where alone there was a market, with thirty-five or forty bushels of wheat. Arrived there he could dispose of it only in trade for glass, nails, salt, etc., at a nominal rate of about 30 cents a bushel.³ In 1813 wheat was selling in central Ohio at 20 to 30 cents per bushel, and corn at 10 to 12½ cents. By 1832, when the effects of the canals were beginning to be felt, the price of wheat rose to 50 and 75 cents, and that of corn to 37 cents.⁴ Even as early as 1831, when only a part of the canals had been opened to navigation, and that for a short time only, the canal commissioners reported as follows:⁵

The cash value of wheat, which forms the principal staple for exportation, has been advanced in the vicinity of the canals nearly 100 per cent, while many articles of importation, comprising some of the most important necessities of life, have been much reduced in price. Nor have the benefits of the canal navigation been confined to its immediate neighborhood: but have extended their influence more than one hundred miles from the extreme point to which the navigation has as yet been opened. The stimulus given to industry, by the increased value of the productions of our soil, is already felt, and its effects are seen in the great increase of agricultural productions destined for a foreign market. . . .

This improvement in transportation facilities gave the Ohio farmers an advantage over those who lived to the east of them,

¹ *Niles' Register*, April 26, 1817, p. 144.

² Rept. Canal Commissioners, 1833, House Jour., p. 329. Cf. also Governor's message, 1819.

³ Howells, *Life in Ohio*, p. 138.

⁴ Rept. Canal Commissioners, 1833, House Jour., 1833, p. 329.

⁵ Rept. Canal Commissioners, January 11, 1831, House Jour., 1831, p. 239.

where water transportation was lacking. "Wheat commanded a higher price at Massillon [on the northern section of the Ohio Canal], one hundred miles west of Pittsburgh, than at points sixty miles east of it."¹ Nor was wheat the only commodity thus favorably affected. In 1829 a large amount of wool and cloths was conveyed overland from Steubenville to Massillon and thence sent via the Ohio Canal, Lake Erie, the Erie Canal, and the Hudson to New York and Boston, at a considerable saving over the expense of wagoning to Baltimore or Philadelphia.² In 1833 the canal commissioners concluded, after a detailed computation, that in that year alone a saving of \$312,156.87 in the cost of transportation had been effected by the canals to the advantage of the people of Ohio.³

The effect of increased prices was of course to stimulate production. After the completion of the Erie Canal in 1825, western New York had enjoyed a profitable trade in furnishing supplies to emigrants; but after 1835 Ohio began to export breadstuffs and provisions in addition to supplying her own wants.⁴ In 1835 there was exported from Ohio by the lakes the equivalent of 543,815 bushels of wheat; by 1840 this figure had been raised to 3,800,000, an increase of nearly 600 per cent. In 1850 the exports of wheat and flour by way of the lake were equivalent to 5,754,075 bushels of wheat, and that too in spite of the fact that the crop of 1849 was an absolute failure throughout the West. In the next year the exports were 12,193,202 bushels. Not all of this was carried by the canals, however, as there were now 400 miles of railroad in the state.

Moreover much land which had hitherto been practically inaccessible was opened up by the canals. For instance, at the time the extension of the Miami & Erie Canal was projected, the entire northwestern section of the state north of Piqua was almost a wilderness. Before the completion of the canal in 1845 not a single bushel of grain or a single barrel of flour or pork was exported

¹ Dial, in *Ohio Archaeol. and Hist. Soc. Publ.*, XIII, 479.

² Rept. Board of Canal Commissioners, January 6, 1829, *Ohio Canal Doc.*, p. 328.

³ Rept. Canal Commissioners, January 22, 1833, *House Jour.*, p. 329.

⁴ Andrews, *Report on Colonial and Lake Trade*, 1852, pp. 55, 56.

from this region; by 1846 over 125,000 barrels of flour and almost 2,000,000 bushels of grain were sent through the canal to the northern market. "Besides the products of the farms there was a very large business in the products of the forest, such as lumber, staves, hoop-poles, ashes, etc., all of which had, before that, very little value in that region. During the last eight months of 1848, 300,000 bushels of wheat were transported from that wilderness district."¹ The canals provided also a cheap means of transportation for the timber of this heavily wooded area. It had formerly been the practice in clearing the land to burn the logs in heaps and send the wood-ashes to market. Now canal boats would stop at any point on the canal and take on a load of wood, which sold in 1867 for \$2.50 to \$3.00 a cord. Thus where it had cost \$15 to \$20 an acre to clear the land, the sale of the wood now made clearing in itself profitable.²

But the effects of the canals were not limited to the benefits conferred on the farmers; the mineral resources of the state were also developed and a stimulus given to manufactures. From the moment the canals were opened to navigation the transportation of coal began,³ though it did not assume large proportions until after 1846, when the use of bituminous coal as a furnace coal was inaugurated in Ohio at Lowellville, Mahoning County.⁴ Thereafter its production and exportation increased by leaps and bounds.⁵ New coal mines were opened in the southeastern part of the state, and considerable coal was shipped to Buffalo and other eastern

¹ 12th Ann. Rept. Board of Pub. Works, Exec. Doc., 1849, p. 142.

² 29th Ann. Rept. Board of Pub. Works, 1867, Exec. Doc., 1867, p. 213.

³ Rept. Board of Canal Commissioners, January 6, 1829, Ohio Canal Doc., p. 328.

⁴ Howe, *Hist. Coll. of Ohio*, I, 44. Howe says that in 1840 the number of men employed in mining was 620.

⁵ This is shown in the following table:

COAL RECEIVED AT CLEVELAND VIA THE CANAL FROM THE INTERIOR

Selected Years	Number Bushels	Selected Years	Number Bushels
1833.....	49,131	1850.....	2,347,844
1839.....	134,881	1852.....	3,940,749
1844.....	540,305	1854.....	4,885,003
1846.....	850,931	1855.....	6,339,404
1847.....	1,212,887	1857.....	4,055,011
1848.....	1,959,210	1859.....	1,920,961

points.¹ Salt works were also developed along the Muskingum River and the Hocking Canal, and local salt began to take the place, to a small extent, of that brought from the Onondaga salt works of New York.²

Within two years after it was begun, the first sections of the Ohio Canal were open for navigation. In the following year the southern part of the Miami & Erie Canal was opened. From the beginning down to the middle of the decade 1850-60 the tonnage carried on the canals steadily increased, although the character of the products changed somewhat from time to time. The principal articles transported were wheat, corn, oats, flour, pork, lard, butter, salt, whiskey, coal, pig iron, stone, lumber, and merchandise. The export trade of Ohio to the ocean was divided about evenly between the northern or lake route and the southern or river route. A general line of demarkation separating these two routes might be drawn almost across the center of the state from Piqua, about ninety miles north of Cincinnati on the Miami & Erie Canal, through Urbana, Columbus, Newark on the Ohio Canal, and Zanesville on the Muskingum Improvement, to Steubenville on the Ohio River.³ The country north of this line in general sent its products to, and was supplied with merchandise from, New York; that to the south traded with New Orleans. Of the articles that were sent north to Cleveland and Toledo from the interior of the state, wheat, flour, and pork remained important until about 1852, when their exportation by way of the canals

¹ Governor's message, Exec. Doc. 1837, Doc. No. 1, p. 17.

² The shipments of domestic salt on these two waterways were as follows (Rept. Board of Pub. Works, December 23, 1844, pp. 14, 15):

Year	Muskingum Improvement Salt, bbls.	Hocking Canal Salt, bbls.	Of New York Salt There Was Shipped through the Ohio Canal from Cleveland into the State, bbls.
1840.....	1,705	.....	77,254
1841.....	13,672	4,186	59,773
1842.....	8,774	6,777	49,456
1843.....	11,773	10,279	44,310
1844.....	19,042	9,416	73,325

Cf. also Rept. Board of Pub. Works, 1841, Exec. Doc., 1841, Pt. I, Doc. No. 30, p. 5.

³ Andrews, pp. 705-7.

dropped suddenly. Corn and oats continued to be shipped in about the same quantities until the time the canals were leased in 1861, when the statistics cease. The shipments of coal, on the other hand, continued to increase very steadily until 1857, when they fell to about half the former figures. Some tobacco and wool were also sent north. Salt from New York and general merchandise were the principal commodities that found their way into the interior of the state from Lake Erie, and both of these showed a decline after 1851.

Of the articles that were exported from the state by way of Cincinnati and Portsmouth, and which were evidently destined for the southern markets, wheat was relatively insignificant; flour was important down to the Civil War, though very fluctuating; corn increased steadily until about 1857 (the banner year), when there was a sudden drop; pork and bacon declined greatly after 1852, while whiskey was sent south in a steady and almost unchanging stream to the end of 1860. Practically the only thing imported into the state from the South was general merchandise, and this declined greatly after 1854.

In 1834 the canal commissioners reported a great increase in the amount of through traffic on the canals, "particularly the transportation of merchandise from the lake to the Ohio River, on the way from the eastern cities to the southwestern states."¹ This they attributed to the completion of the canal to the Ohio River, to a reduction in the canal tolls, and to a wider knowledge of the advantages of this route. About 1840, a great reduction in the price of transportation to the eastern cities by way of New Orleans diverted much of the produce of the southern part of the state to the longer river and ocean route, from the canal and lake route.² After 1840, consequently, a change took place in the direction of the traffic through the canals. Goods began to go down the Ohio and Mississippi rivers to New Orleans, from which place they were sent to the Atlantic seaboard, instead of going through the canals and the lakes. The movement was from east to west through the canals; while return shipments from west to east were

¹ Rept. Canal Commissioners, House Jour., 1834, p. 385.

² Rept. Board of Pub. Works, Exec. Doc., 1841, Doc. No. 30, p. 4.

made down the Mississippi. Portsmouth now became important chiefly as an exporting point for Ohio produce and only rarely for through traffic. Salt was almost the only article which was sent through the canals for points farther south.¹ In 1840, for instance, out of 77,254 barrels of New York salt received at Cleveland, 12,390 barrels were passed through Portsmouth and sent on down the Ohio; the rest was used for domestic consumption. Owing to the great length—308 miles—and the enormous lockage—1,206 feet—the Ohio canal had very little through traffic; while the Miami & Erie was completed too late—1845—to be able to compete seriously with the railroads. Practically all the products carried on the Ohio canals were raised in the state and sent out, or were shipped into the state for domestic consumption.² In this respect the canals differed from the Erie Canal and the Pennsylvania canals.³

In consequence of this local character of the traffic, the canal revenues were immediately affected by fluctuations in the wheat crop, which was the staple agricultural crop in Ohio during this period. In 1829 the receipts from tolls were less than expected because of the unusually light crop of wheat. In 1841 the decrease in receipts was ascribed to the partial failure of the wheat crop, especially in the southern half of the state. In 1850 the decrease was said to have been occasioned chiefly by the diminished wheat crop of that year. On the other hand, in good years the revenues increased from the same source.

The changing conditions of canal traffic are well illustrated by the efforts of the canal commissioners to retain control of the elusive business by adapting the tolls to new conditions as they arose. In general they followed the principle of "charging what the traffic will bear." Thus the highest rates were charged on merchandise (a general term which included dry goods going south, and sugar, molasses, iron, nails, and other articles going north);⁴ and lower rates were fixed on cheap bulky articles, as coal, stone, lumber, etc. But the early rates were so high as to be practically

¹ 5th Ann. Rept. Board of Pub. Works, January 11, 1842, p. 4.

² 8th Ann. Rept. Board of Pub. Works, December 23, 1844, pp. 4-7.

³ Rept. Board of Pub. Works, Exec. Doc., 1843, Doc. No. 28, p. 5.

⁴ Cf. Rept. Board of Pub. Works, 1845.

prohibitive for through traffic. Accordingly, in 1833, the year of the completion of the Ohio Canal, a new schedule of tolls was put into operation which cut the old rates in half.¹

In the following year the Ohio board of canal commissioners invited the members of the New York canal board to meet with them and discuss a reduction in rates on through traffic. At the meeting it was agreed to reduce the rates on merchandise passing from the Hudson to the Ohio River 25 per cent below the existing rates, both on the Erie and on the Ohio canals.² In 1837, when the prices of produce had risen greatly, largely on account of the inflation of the currency, 20 per cent was added to the then existing rates; the next year this was taken off merchandise passing south from Cleveland. In 1842, in consequence of the fall in prices, the board again reduced the tolls on wheat, flour, pork, lard oil, corn, leaf tobacco, and merchandise passing north, to the former rates. They also made a discriminating rate on flour, wheat, pork, lard oil, corn, and leaf tobacco passing over 200 miles, as an inducement for the shipment of these articles by the northern route.³

The canals were exposed to competition on all sides, and, during

¹ The following table, giving a few selected rates, shows this clearly (Rept. Canal Commissioners, February 23, 1830, and February 21, 1833):

RATES OF TOLL FOR OHIO AND MIAMI CANALS

ARTICLES	1830		1833	
	Cts.	M.	Cts.	M.
All kinds of merchandise, except as below, for first 100 miles or any part, per ton per mile	4.	0	2.	0
Same for each mile above 100	3.	0	1.	5
Same for each mile above 200 . . . . .	..	..	1.	0
Flour, wheat, beans, peas, whiskey, seeds, etc., per ton per mile up to 100 miles	1.	5	7½	
Same for each mile above 100	1.	0		5
Same for each mile above 200 . . . . .	..	..		3
Corn, oats, rye, barley, buckwheat, etc., per ton per mile, up to 100 miles	1.	0		5
Same for each mile above 100		7		3
Mineral coal and iron ore, per ton per mile, up to 100 miles		5		2
Same for each mile above 100		3		1
Bricks for any distance, per 1,000 per mile	1.	0	2.	0
Stones for building and rough stone, per perch per mile		5		5
Same for each mile above 20 . . . . .	..	..		2
Boards, planks, scantling and other sawed stuffs, per 1,000 ft. per mile up to 100 miles	1.	0	Rates same; Distance, 50 miles	
Same for each mile above 100		5		

² Rept. Canal Commissioners, House Jour., 1834, p. 385.

³ Rept. Board of Pub. Works, Exec. Doc., 1843, Doc. No. 28, p. 6.

the pressure of hard times and close economies, this manifested itself strongly. The construction of macadamized roads to connect with the National Road, together with the low rates of toll upon them, diverted considerable traffic from the canals in the southern part of the state in the vicinity of Cincinnati. In the North, too, many farmers wagoned their produce to the lake ports, where they exchanged it for salt and merchandise for their neighboring merchants, whereas in good times they would have sold it for cash and sent it by canal. Most important, however, was the competition created by the eastern cities and the different lines of transportation leading to them. Thus the Pennsylvania and Baltimore routes reduced their rates in 1843 below the cost of shipment by the Ohio Canal and the lakes, diverting the flour, pork, and leaf tobacco of the Muskingum valley, as far up as McConnellsville, to these routes. As a result of these causes the amount of wheat shipped north over the Ohio Canal that year fell off almost 500,000 bushels. There was also a marked decline in shipments of coal and pork.¹

The completion, in 1845, of the Miami & Erie Canal, which was much shorter and had less lockage than the Ohio Canal, induced the canal commissioners to make a determined effort to regain some of the traffic which had thus been diverted to other channels. Consequently in July of that year a great reduction was made in the rates of toll on all through traffic, especially on the heavy products of the Ohio valley and of the states to the south and west, so as to induce their shipment through the canals to the lake route.

Iron, in its various forms, sugar and molasses, and other products of the south; hemp, cordage, bagging, and tobacco, the produce of Kentucky; lead of Missouri, etc., etc., were invited by low rates of tolls; and even flour and whiskey, which have hitherto gone south, were, for a time, induced to take a northern direction. All these heavy articles afforded freight for boats going northward, and thus secured a cheaper transportation for the merchandise of the east coming south, than could have been afforded had boats returned without freight, or only partially freighted.²

¹ Rept. Board of Pub. Works, 1843, p. 6.

² Rept. Board of Pub. Works, Exec. Doc., 1845, Pt. I, Doc. No. 22, p. 281.

It will be noticed that the canal commissioners practiced the various methods of later traffic managers of railroads: "charging what the traffic will bear," encouraging backloading, discriminating freight classification, lower rates for through traffic than for local, etc.

The effect of these changes in the rates of toll is well shown in the following table:

ARTICLES SHIPPED THROUGH MIAMI & ERIE CANAL AND RECEIVED
AT TOLEDO*

Articles	1845	1846	1849
Molasses [gals.].....	.....	463,500	1,219,151
Nails and spikes [lbs. or kegs?] .	4,366	24,776	16,039
Sugar [lbs.].....	.....	1,164,591	1,732,341
West India fruit [lbs.].....	.....	150	3,300

* Rept. Board of Pub. Works, March 16, 1850.

In April, 1851, another general reduction in tolls was made, amounting on the average to about 30 per cent. The gross receipts in tolls increased under this encouragement nearly \$100,000, and the canal freightage increased more than 40 per cent.¹ The immediate occasion for this drastic change was the growing competition of railroads, and to this phase of the subject we must now devote more careful consideration.

The railroads of Ohio may be said to belong to two distinct and well-defined periods in the history of the internal improvements of the state.² The first period includes those commenced during the speculative movement of 1836 and 1837, and given state aid under the loan act of the latter year. Of the railroads commenced at that time four only were carried to completion, and these not until 1845-46. The other projects, premature and unable to stand without state support, fell to the ground. One of the railroads that was completed was the Cincinnati, Sandusky & Cleveland, which by 1848 offered through rail communication between Cincinnati and the lakes. Up to this time the railroads had been only isolated fragments, and no entire route had traversed the length or breadth of the state.

The second period of railroad development in Ohio may be said to date from about 1850. In this year there were 375 miles of railway in the state. The next decade saw a rapid extension of the railway net across the middle states, and Ohio fully shared in

¹ Rept. Board of Pub. Works, December 29, 1851.

² Andrews, *Rept. on Colonial and Lake Trade*, p. 356.

this expansion; lines were built in every direction, paralleling and crossing the water routes and offering most effective competition. In 1851 the Cleveland, Columbus & Cincinnati line was opened for traffic; the Cleveland & Pittsburg in 1852. "In the same year the Michigan Central and Michigan Southern lines were both opened. The connecting link between Cleveland and Toledo was opened in the next year, furnishing through rail communication to Chicago"¹ from the Atlantic seaboard. By 1860 the railroad mileage in Ohio had grown to 2,946, which meant the building of 2,571 miles during the decade, or three times the mileage of the entire canal system. The effect of this new and vigorous competition upon canal traffic and canal revenue was immediate and disastrous; by 1856 the gross receipts of the canals had for the first time fallen below the cost of operation and maintenance.

The shifting of traffic from the canals to the railroads was at first vigorously resisted by the canal commissioners;² but later they became resigned to the situation and made no effort to change it. In general, the principle followed had been to fix a maximum toll on all articles, and then a rate per mile until this maximum was attained. For through freight between the river and the lakes still lower rates had been granted. In the toll sheet

¹ Hadley, *Railroad Transportation*, p. 36.

² At first the full significance of the change to be wrought by railroad competition was not realized, and it was thought that the canals would continue to hold their own. The following extract from the debates in the constitutional convention, held in 1850, will illustrate this point:

"Mr. Archbold: I therefore anticipate a great reduction of tolls [on canals], for surely no man will adopt the tedious and costly mode of conveyance by the canals, when he can send his property by the cheaper and speedier route of the railroad. The great saving of time and trouble will give the railroads an immense preference.

"Mr. Reemelin: The price of coals is so great in Ohio that railroads can never transport heavy goods as cheaply as the canals, and I think, take it upon the average, owing to the increase of wealth and of production by the means of the railroads, the canals will still find as much employment as formerly, and that the gross amount of tolls will not be reduced.

"Mr. Hitchcock: It has been found that railroads built along the lines of canals have not diminished the net revenue of the canals. In England, where railroads have been built right by the side of canals, it has in many instances increased the carrying trade and revenues of the canals in part by carrying coals for the railroads and railroad works.

"Mr. Archbold: I may be mistaken in this matter."—Debates of Ohio Constitutional Convention, 1851, I 483.

of April, 1851, mentioned above, a new principle was adopted, to meet the competition of the railroads. At the principal points of contact with the railroads, namely, Dayton, Columbus, and Newark, rates on the canals were reduced to a point considerably below the previous rates. Thus, the rate on wheat, flour, pork, whiskey, etc., from Newark to Cleveland, was cut from \$1.00 per 1,000 pounds to 70 cents; while from Columbus to Cleveland the rate was made only 60 cents—a lower rate for a longer haul.¹ When objection was made to these discriminatory rates, on the ground that they would build up the favored points at the expense of others, the board admitted the truth of the objection, but added: "This advantage was not given to them by the action of the Board of Public Works." The following year, however, they completely abandoned the principle of discrimination, in the toll sheet of January 29, 1852, and adopted the former method of a uniform rate per mile until the maximum was attained, no exception being made in favor of any particular point.² At the same time a general reduction of about 25 per cent in rates was made on all articles.

The Board of Public Works expressed the hope that their action would be seconded by the railroad companies whose lines intersected the canals, in the establishment of uniform rates of freight on their lines. And in its session of that year the legislature endeavored to give legislative authority to this wish by the enactment of a law³ requiring railroads in the vicinity of, or intersecting, the state canals to establish uniform rates of freight, and to publish their freight tariffs, and forbidding them to charge less or to evade such published rates. The railroad companies, however, did not obey the law, but treated it as a nullity.⁴ The

¹ Rept. Board of Pub. Works, Exec. Doc., 1851, Pt. I, Doc. No. 22, p. 294.

² Rept. Board of Pub. Works, Exec. Doc., 1852, Pt. I, Doc. No. 19, p. 229. In this same report the Board speaks of "the beneficial influence, to the people, of a fair competition between the canals and railroads." The Board opposes the sale of the canals on the ground that they would most likely be bought up by the railroads, which would then have a complete monopoly of the carrying trade at their own rates of freight.—*Ibid.*, p. 330.

³ Act of May 1, 1852.

⁴ Rept. Board of Pub. Works, Exec. Doc., 1852, Pt. I, p. 230. Cf. Spec. Rept. Board of Pub. Works, Exec. Doc., 1861, App., p. 92.

falling-off in canal tolls the next year was ascribed by the Board of Public Works to the decrease in the wheat crop—it was over 5,000,000 bushels less in 1852 than in 1850—and to the larger home consumption of breadstuffs owing to the presence of great numbers of laborers engaged in the construction of railroads. To forestall, if possible, the growing competition of the railroads, another wholesale reduction in canal freight rates was made of about 30 per cent below the level fixed by the previous toll sheet of January 29, 1852.

The rates of toll were now lower than on any other canals in the United States, not excepting the Erie Canal,¹ and would have been sufficiently low to retain the vanishing traffic had other conditions been equal. But the other conditions were not equal. The Ohio canals, owing to their length and their great lockage—this was especially true of the Ohio Canal—had never been adapted to through traffic, but had been of service primarily in carrying Ohio's own products to market. But even now Ohio farmers were feeling keenly the competition of states farther west in wheat-growing, which was steadily moving westward with the railroads. The canals, too, ran north and south, while the routes of trade were now east and west, so that the railroads met the needs better than the canals and rivers. But, most of all, the railroads themselves were being improved, and as they grew were seeking new business at any price. The scattered fragments and links were now being connected into systems. “‘Consolidation’ is the order of the day,” wrote the Ohio Canal Board, “or affiliations of interests, heretofore deemed irreconcilable. The immense railroad system of Ohio is rapidly becoming a unit, over which periodical conventions of railroad officers constitute a flexible, but most efficient, board of control.”² The mere growth of the railway net in Ohio, penetrating into almost every county in the state, with active, energetic agents to solicit business at every important point, put the canals at a disadvantage. Add to this the practice of discrimination by the railroads,³ in which the state officers could not engage, and the

¹ Rept. Board of Pub. Works, Exec. Doc., 1853, Pt. I, Doc. No. 3, p. 45.

² Rept. Board of Pub. Works, Exec. Doc., 1853, Pt. I, p. 47.

³ “And in many cases, to get freight, they have even made special contracts, at prices below their usual charges.”—Rept. Board Pub. Works, Exec. Doc., 1855, Pt. I, Doc. No. 32, p. 440.

real wonder is, not that the canals lost traffic, but that they retained any. It was much easier for the railroads to steal the existing business than to develop new business. As a matter of fact the tonnage of the canals kept growing, but the increase was in a class of freight upon which very low rates of toll were charged, and chiefly in coal.¹ The net revenues, on the other hand, were now steadily falling, and in the year 1856 fell below zero.

The chief reason for this deficit was the loss of revenues on the Miami & Erie Canal, the receipts of which were practically cut in half by the competition of the Toledo & Western R.R., when it opened for business in the summer of 1856. This road extended from Toledo to Lafayette, Ind., touching every important canal town for a distance of 216 miles. It continued to divert traffic to itself from the canal until, in 1860, of 7,000,000 bushels of wheat, corn, and oats received at Toledo, over 4,000,000 bushels were carried by the railroad.² In the next year a large portion of the remaining business was taken from the Miami & Erie Canal by the opening of the Wabash Valley Railroad.³ The Ohio Canal met even more severe competition. The Pennsylvania & Ohio Canal Co., to which the state had contributed \$450,000, was sold to the Cleveland & Mahoning R.R. Co., which immediately raised the rates of toll on the canal to a prohibitive figure, thus diverting from the state canal, to which it was tributary at Akron, a considerable amount of traffic. Between Akron and Dover the Ohio Canal came into competition with the Tuscarawas branch of the Pittsburgh & Cleveland R.R.; the competition of this road culminated in 1860, when it secured a written contract from all shippers of freight to or from Dover to use the railroad in preference to the canal, without regard to any reduction in toll rates made on the canals, or reduction in the price of transportation by boat owners.⁴

Although the canal tolls had been repeatedly reduced, it became necessary to decrease them still further in order to meet this active and growing competition. In the spring of 1859 a further reduction

¹ *Ibid.*, p. 440.

² Minority Rept. Board of Pub. Works, 1861, Exec. Doc., App., p. 97.

³ Rept. Board Pub. Works, Exec. Doc., 1857, Pt. I, Doc. No. 12, p. 482.

⁴ Minority Rept. Board of Pub. Works, 1861, Exec. Doc., App., p. 97.

of about 30 per cent was put into operation, which it was hoped would save to the canal at least the carriage of the heavier kinds of freight.¹ But even these classes of traffic were now declining, the year 1855 having, for example, marked the maximum of coal received at Cleveland from the canal. Every reduction in the canal tolls was met by similar reduction in railroad freight charges, where they came into competition with the canals, and thus the act of the canal board failed to retain the traffic, and resulted only in lower revenues. The outbreak of the panic in the summer of 1857 materially affected the canal business, together with that of the railroads, although a deficit in the net revenues was averted by drastic economies of over \$70,000 in expenditures. The appearance in the next year, however, of an actual deficit of over \$60,000 led to serious questioning of the value of the state canals and to agitation for their sale or lease. After five years of deficits, the General Assembly was persuaded to lease the canals to a private corporation, by which they were operated until 1877. During this period no statistics of traffic or rates are available.

ERNEST L. BOGART

UNIVERSITY OF ILLINOIS

¹ Rept. Board of Public Works, Exec. Doc., 1859, Pt. I, p. 645. The character of the reductions, which were greatest in the case of the maximum rates, is well illustrated by these extracts from the toll sheets:

RATES OF TOLL PER 1,000 POUNDS

Commodity	1856	1860
Wheat.....	6 mills per mile, not to exceed 60 cents	5 mills per mile, not to exceed 30 cents
Corn.....	4 " " " " " " 50 "	5 " " " " " " 30 "
Flour.....	6 " " " " " " 50 "	4 " " " " " " 20 "
Pork.....	5 " " " " " " 70 "	4 " " " " " " 20 "
Whiskey.....	6 " " " " " " 70 "	4 " " " " " " 20 "
Merchandise.....	8 " " " " " " 100 "	6 " " " " " " 50 "